CELLS UNIT GUIDE Due October 22nd, 2015 Answers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| **10/5**  Ecology Test | **10/5**  Test Correction  CBA | **10/7**  \*Cell theory  \*Eukaryote introduction | **10/8**  \*Eukaryotes  \*Cell organelle card sort  **UG: Questions1-5** | **10/9**  **NO SCHOOL** |
| **10/12**  \*Prokaryotes | **10/13**  \*Compare and Contrast  **Chp3 Check**  **UG: Questions 6-10** | **10/14**  **PSAT** | **10/15**  \*virus  **UG:Questions11-16** | **10/16**  \*Virus |
| **10/19**  \*Virus | **10/20**  \*Lab: intro microspcope  **\*Quiz-Vocab**  **Vocab Exercises Due** | **10/21**  \*Lab: Microscope  **Chp18&19 Check** | **10/22**  **\*Complete Unit Guide Due-**Review | **10/23**  **CELL TEST** |

**Read:** Chapters 3, 18, and 19 **UNIT TEST:** October 23, 2015

**Watch (Supplemental Resource):**

**Mr. W’s Raps : I’m a Virus** [**https://www.youtube.com/watch?v=kYf\_Sl8W3qY**](https://www.youtube.com/watch?v=kYf_Sl8W3qY)

**Mr. W’s song: The Cell** [**https://www.youtube.com/watch?v=rABKB5aS2Zg**](https://www.youtube.com/watch?v=rABKB5aS2Zg)

**Book online at :** [**http://my.hrw.com**](http://my.hrw.com)

Use your username and password to get to the biology book or

Username: 1eagles3 Password: gogreen!

**Mrs. Lamkin’s website:** [www.lakeridgesciencelamkin.weebly.com](http://www.lakeridgesciencelamkin.weebly.com) Password: swim@h2o

**What the state of Texas wants you to know!**

* TEKS 4A- compare and contrast prokaryotic and eukaryotic cells;
* TEKS 4C- compare the structures of viruses to cells, describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza;
* TEKS 10C- Analyze the levels of organization in biological systems and relate the levels to each other and the whole system.

**Listen and Look**

Here is a list of key terms you will hear and see during the reading and video. Get to know them!

**Directions:** Your objective in this activity is to earn 100 points. Choose any activities you wish and complete by the due date assigned.

|  |  |
| --- | --- |
| **Activity** | **Points** |
| 1. Complete a Frayer diagram for each word. Divide your diagram into the following categories: definition, Sentence, Diagram, and Example. (Diagram is a labeled picture.) | 100 |
| 2. Create a Vocabulary Booklet. Each page must have the term at the top, the definition at the bottom, an example and an illustration in the middle with a sentence or description using the term. | 100 |
| 3. Word Detective for all words. Use your textbook and a dictionary…Do they provide the same definitions? (Make a chart that has the word, definition from book and page #, definition from dictionary, name of dictionary and page #, and sentence using word.) | 100 |
| 4. Complete a Vocabulary Log with all vocab words: (word, definition, and example or illustration). | 50 |
| 5. Create a rap, song, riddle, or poem including words and meanings. (25 points extra if you perform it for the class) | 50 |
| 6. Diagram representation of each word. Needs to be no more than 4 on a page (A diagram is a labeled picture) | 25 |
| 7. Create and complete a crossword puzzle including all words. You MUST give clues or definitions for the Across and Down Sections. You may not use the same clues or definitions as word search. | 50 |
| 8. Create and complete a word search including all words. You MUST give clues or definitions. DO NOT list the actual key word. You may not use same clues or definitions as the crossword puzzle. | 50 |
| 9. Write an essay or story including all words. Only one word per sentence. Words must be used correctly. Spelling and grammar will be considered. Essay/story must be at least 3 paragraphs long. | 50 |
| 10. Write a sentence for each word that shows the meaning of the vocabulary. This is NOT simply writing the definition. | 25 |
| 11. Create a detailed and logical concept or word map. Use linking words on the lines or arrows. Must show relationship between words. | 50 |
| 12. Create a set of flashcards. | 25 |

Visit: <http://bit.ly/1umMyTO> or

<http://lakeridgesciencelamkin.weebly.com/biology-vocab-templates.html>

to obtain templates and link to websites to help with your assignment.

VOCABULARY EXERCISES: **Due October 20, 2015**

VOCAB QUIZ: ….

* **Prokaryote:** cell that does not have a nucleus or other membrane-bound organelles.
* **Eukaryote:** cell that has a nucleus and other membrane-bound organelles.
* **Virus:** infectious particle made only of a strand of either DNA or RNA surrounded by a protein coat.
* **Cell:** basic unit of life
* **Disease:** a body, organ or system condition resulting from various causes such as infection, genetic defect or environmental stress.
* **Pathogen:** agent that causes disease.
* **Vaccine:** substance that stimulates an immune response, producing acquired immunity without illness or infection.
* **Antibiotic:** chemical that kills or slows the growth of bacteria.
* **Epidemic:** rapid outbreak of a disease that affects many people.
* **Cell Theory:** theory that states that all organisms are made of cells, all cells are produced by other living cells, and the cell is the most basic unit of life.
* **Organelle:** membrane-bound structure that is specialized to perform a distinct process within a cell.
* **System:** changing, organized group of related parts that interact to form a whole.
* **Bacteria:** organism that is within the kingdom Bacteria.
* **Protist:** eukaryote that is not an animal, plant or fungus.
* **Protozoa:** animal-like protist.
* **Lytic Cycle:** infectious pathway of a virus in which host cells are destroyed.
* **Lysogenic Cycle:** infectious pathway of a virus in which host cells are not immediately destroyed.
* **Conjugation:** process by which a prokaryote transfer part of its chromosome to another prokaryote.
* **Binary Fission:** asexual reproduction in which a cell divides into two equal parts.
* **Toxin:** poison released by an organism
* **HIV:** Human Immunodeficiency Virus- virus that weakens the immune system by reproducing in and destroying T cells; and causes AIDS.
* **Influenza:** “flu”-commonly epidemic disease caused by rapidly mutating virus.

**Recall and Review:** Use the lecture in the video and your textbook to help you answer the following questions in your 3-ring binder. ANSWER IN FULL SENTENCES.

**A. Chapter 3 (Section 1)**

1. **State** the cell theory.

*All living things are made of cells*

*All cells come from other living cells*

*The cell is the most basic unit of life*

1. **Explain** how improvements in the microscope helped scientists develop the cell theory.

*Scientists were able to observe various cells*

1. **Compare and contrast** prokaryotes and eukaryotes in a T Chart.

|  |  |  |
| --- | --- | --- |
| Prokaryotes | Both | Eukaryotes |
| *No nucleus*  *No organelle*  *Circular DNA*  *Bacteria*  *Unicellular* | *Cell membrane*  *Cytoplasm* | *Nucleus*  *Organelles*  *Linear DNA*  *All kingdom beside bacteria*  *Unicellular or multicellular* |

1. **List** the characteristics that are shared by most cells.

*They come in different shape and carry out different jobs. Most are small. They are surrounded by a cell membrane that controls what enters and leaves the cell. They have cytoplasm, a jellylike material that contains the building blocks needed for life. One of these molecule is DNA- the genetic information.*

**B. Chapter 3 (Section 2)**

5. Complete the following table (by placing a checkmark) to indicate if the organelles are found in

plants, animals, or both. Write the function of each organelle in your own words.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PLANTS** | **ANIMALS** | **FUNCTION** |
| Chloroplast | *X* |  | *Help with the process of photosynthesis* |
| Central Vacuole | *X* |  | *Storage* |
| Cell Wall | *X* |  | *Surround the cell membrane and is used for support.* |
| Cytoskeleton | *X* | *X* | *Skeleton of the cell* |
| Vesicle | *X* | *X* | *Small circular organelle used for transport of various substances* |
| Nucleus | *X* | *X* | *Hold the genetic info and control the cell* |
| Nucleolus | *X* | *X* | *Assembly of ribosomes* |
| Rough Endoplasmic Reticulum | *X* | *X* | *Protein synthesis and processing* |
| Smooth Endoplasmic Reticulum | *X* | *X* | *Lipid synthesis* |
| Ribosome | *X* | *X* | *Site of protein synthesis* |
| Centrosome |  | *X* | *Place where microtubules get organized and is used in cell division.* |
| Cell Membrane | *X* | *X* | *Separate the inside from the outside* |
| Golgi Apparatus | *X* | *X* | *Transport of substances* |
| Mitochondrion | *X* | *X* | *Energy Production* |
| Vacuole | *X* | *X* | *Function varies: storage of carbohydrates, lipid, water* |

**C. Chapter 18 (Section 1)**

6. **Differentiate** between living cells and viruses in a Venn Diagram.

Living cells Virus

Both

* *Cell membranes*
* *Some have organelles*
* *Can metabolize*
* *Cellular*
* *Can maintain homeostasis*
* *Can reproduce sexually or asexually*

*They both have genetic information*

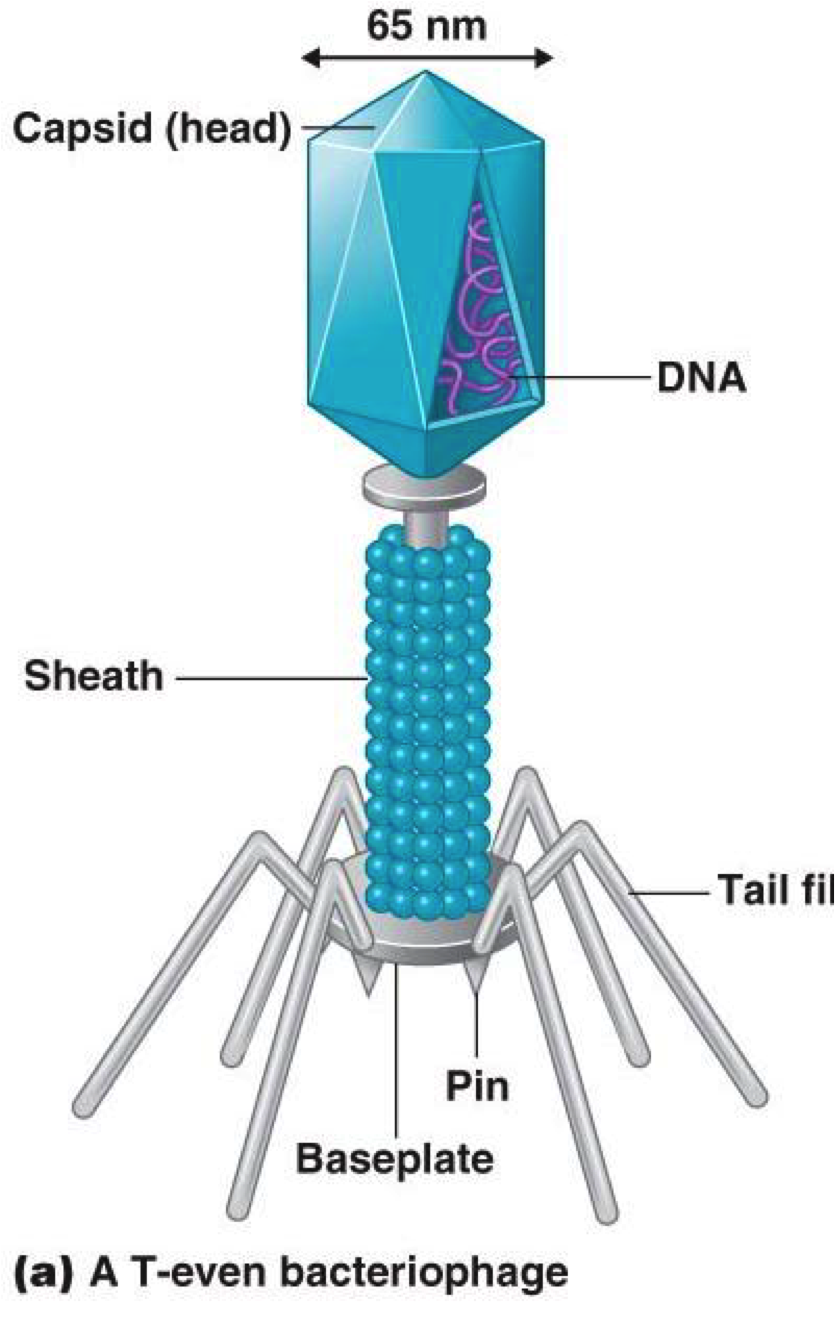
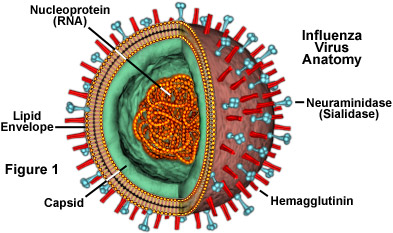
* *Non-living*
* *Can be a pathogen*
* *Reproduce with lytic and lysogenic cycle.*

7. **State** the characteristics all pathogens have in common.

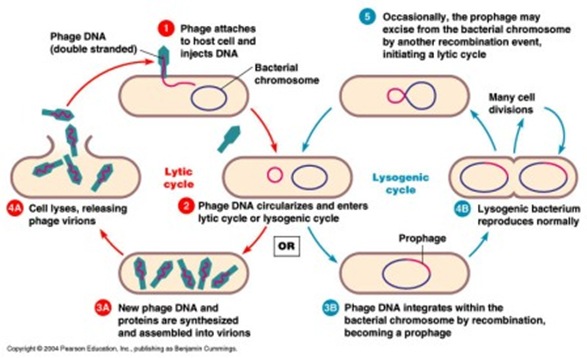
*All pathogen cause diseases*

**D. Chapter 18 (Section 2)**

8. **Draw and label** that main parts of a typical virus.

9. **Draw and label** the lytic and lysogenic cycle.



10. **Describe** the differences in infection between the lytic and lysogenic cycle.

*In the lytic cycle the host cell is destroyed immediately. In the lysogenic the viral DNA is incorporated with the host DNA. The cell is not immediately destroyed. The virus can remain dormant for a long time while the cell divides until the virus reproduce and destroy the host cell.*

**Chapter 18 (Section 2)**

11. **Explain** the effects on cells from both the lytic and lysogenic cycles.

*See Question 10*

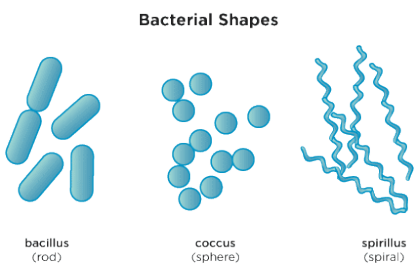
12. A wart is caused by a virus that may lie dormant for years before any symptoms appear. Does

this resemble a lytic or lysogenic infection? **Explain**.

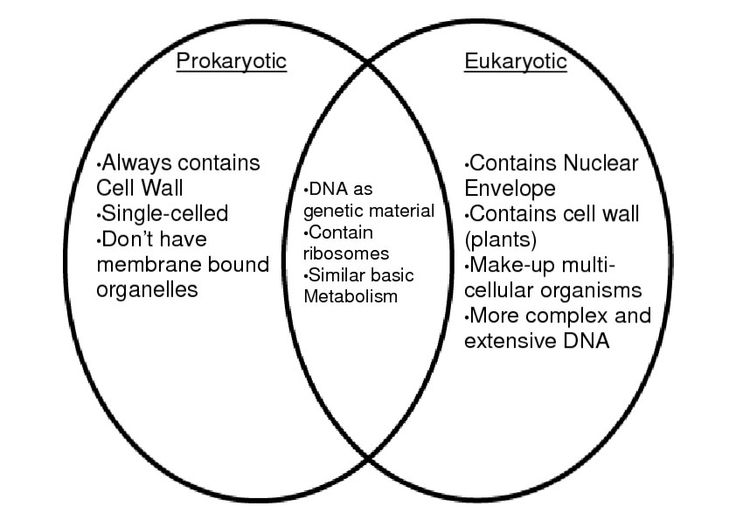
*Lysogenic cycle because the virus remains dormant before new viruses are made.*

**E. Chapter 18 (Section 4)**

13. **List and draw** the three most common shapes of bacteria.



14. **Compare and contrast** bacteria and eukaryotes in a T-Chart.



**F. Chapter 18 (Section 6)**

15.  **Describe** two ways in which bacteria can cause disease.

*Some produce toxin that can damage tissue and make us sick*

*Some damage cells and make us sick*

16. **Explain** how antibiotics can stop bacteria infections.

*Antibiotic break down the cell wall or prevent the bacteria from building a cell wall. Some prevent bacteria from building proteins, some antibiotic causes the bacteria to break down their DNA.*

**G. Chapter 19 (Section 7)**

17. **List** the main characteristics of protozoans.

*Protozoans are animal like protists that have the ability to move independently. They are unicellular with some colonial. Most are microscopic. They are eukaryotic.*

18. Using a Venn diagram to **compare and contrast** protozoans and animal cells.

Protozoans Animal Cells

Both

*Kingdom Protista*

*Most are unicellular*

*Microscopic*

*Most live in aquatic environment.*

*Kingdom Animalia*

*They are Multicellular*

*Most are large*

*They live in terrestrial and aquatic environment.*

*Eukaryotes*

**H. EOC Sample Questions**

19.Viruses are exceptions to the cell theory, but they have some characteristics of living things. What is one of these characteristics?

1. They are made up of many specialized cells.
2. *They contain genetic material.*
3. They reproduce by mitosis
4. They contain chlorophyll.

20.Which of the cells characterized in the chart below is a prokaryotic cell?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Ribosome | Cell Wall | Chloroplast | Nuclear Membrane | Plasma Membrane |
| Cell A | x | x | x | x | x |
| Cell B | x |  |  | x | x |
| Cell C | x | x |  |  | x |
| Cell D | x | x |  | x | x |

1. Cell A
2. Cell B
3. *Cell C do not have a nucleus*
4. Cell D

**Notes:**